

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number
WO 2005/068838 A1

(51) International Patent Classification: F04C 2/344, 15/04

(21) International Application Number:
PCT/EP2005/050037

(22) International Filing Date: 5 January 2005 (05.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
BO2004A000008 9 January 2004 (09.01.2004) IT

(71) Applicant (for all designated States except US): PIER-
BURG S.p.A. [IT/IT]; Zona Industriale Contrada Cer-
ratina, I-66034 LANCIANO (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ARMENIO, Gia-
como [IT/IT]; Via S. Lucia, 10, I-57128 LIVORNO (IT).
CELATA, Bernardo [IT/IT]; Via Goito, 34, I-57100
LIVORNO (IT).

(74) Agents: JORIO, Paolo et al.; STUDIO TORTA S.r.l., Via
Viotti, 9, I-10121 TORINO (IT).

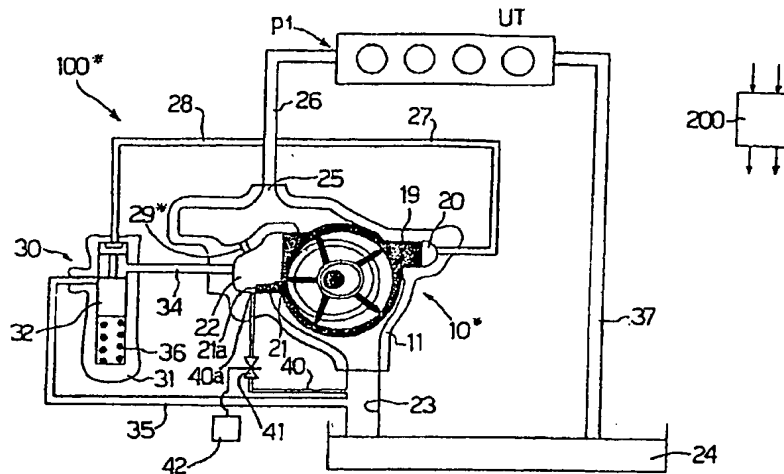
(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

[Continued on next page]

(54) Title: PUMPING SYSTEM



(57) Abstract: A pumping system (100*) having a pump (10*), such as a variable-displacement vane pump (10*) or a gear pump. The pump (10*) in turn has hydraulic pressure-control dissipating devices (29, 30) for imparting to the oil in a first control chamber (22) a pressure (p2) lower than the pressure of a second chamber (20). The system (100*) is characterized in that the first control chamber (22) of the pump (10*) has a channel (40) connecting the first control chamber to an oil inlet (23). And the channel (40) has an opening/closing device (41) controlled selectively by an engine operating parameter, such as oil temperature.

WO 2005/068838 A1